

1. Detective Sandra Sly went shopping for some new disguises and paid \$182.52 for a wig, clothes, glasses, and makeup. This included 8% tax. What was the bill without the tax?



2. Simplify: $(4x)(10y)(\frac{1}{4}x)$

3. Which example shows the associative property?

- a. $(3.5 + 6.7)x = 3.5x + 6.7x$
- b. $(xy)^2(1) = x^2y^2$
- c. $a(b^2c^2) = (ab^2)c^2$

4. Evaluate each expression.

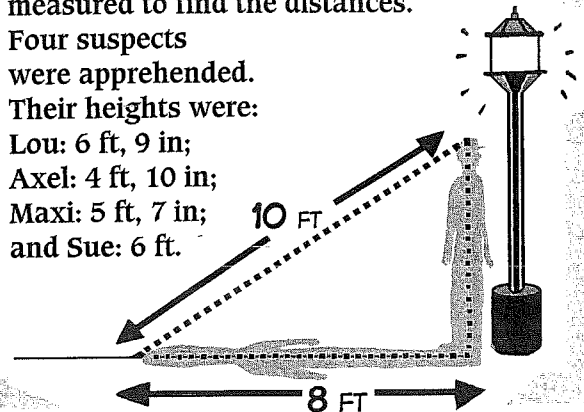
$$x^{-5} \quad 6^{-3} \quad \frac{3^{-2}}{4}$$

5. Use the information and the diagram to decide which suspect could have been the shadowy figure.

Just after a jewelry store theft, a witness saw a shadowy figure hiding against a building nearby. She noticed that the shadow of the figure reached just to the edge of the sidewalk. Investigators measured to find the distances.

Four suspects were apprehended. Their heights were:

Lou: 6 ft, 9 in;
Axel: 4 ft, 10 in;
Maxi: 5 ft, 7 in;
and Sue: 6 ft.



1. Solve: $66 = 2 + \frac{x}{5}$

2. Use numbers and symbols to write the following expression:

The length of the movie *The Pink Panther* (m) is greater than seventy-five minutes and less than ninety-nine minutes.

3. Evaluate: $\sqrt[5]{243}$

4.

A thief used a skateboard as a getaway vehicle. The robbery was at 10:15 PM. She has been moving ever since at 6.5 mph, and is 26 miles from the scene. What time is it?

5. A great detective movie, *The Pink Panther* (2006), took in a large amount of money at the box office. Use the clues to find the dollar amount.

CLUES:

- THE NUMBER HAS FOUR PRIME FACTORS.
- TWO OF THE PRIME FACTORS ARE 733 AND 5099.
- THE OTHER TWO FACTORS HAVE A PRODUCT OF 22.

Name _____

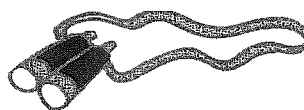
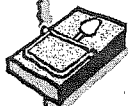
1. A private investigator watched a suspect for a total of 32.5 hours for three days. On Tuesday, he watched 8 hours more than half as many as on Monday. On Wednesday, he watched twice the hours as on Monday. How many hours did he watch on Tuesday?

2. Simplify both sides of the equation.

$$\frac{2}{3}x + 6x - 7 + 2 = \sqrt{10,000 - 5^2}$$

3. Agatha Christie's mystery, *The Mousetrap*, is the longest running play in London. To find the number of performances as of 2006, simplify the expression.

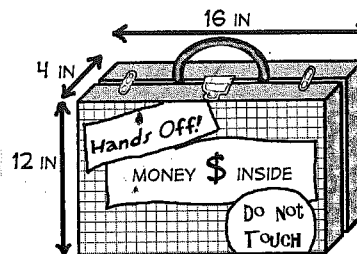
$$2^3 \cdot 2^2 \cdot 5^2 \cdot 5^2$$



4. Circle the simplification for $(4x)(6x)$.

$$\begin{array}{ccc} 10x & 24x & 24x^2 \\ 10x^2 & 2x^2 & 2x \end{array}$$

5.



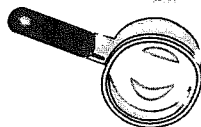
5. A thief is trying to transport some cash, all in the denomination of \$50 bills. The money is bundled in stacks of 150 bills each, measuring 2 inches thick. A bill is 2.5 inches wide and 9 inches long. Could the thief fit \$75,000 in this briefcase?

Name _____

1. The oldest bank robber on record was arrested by a detective who was much younger. The sum of their ages was 133 years, and the difference was 51 years. What was the age of the robber?

2. Evaluate: $-100y + \sqrt{10,000y^2}$

3. The mystery novels of Agatha Christie, "the Queen of Crime," have sold forty million copies in France alone. Is this the same number as $2,000^2$?



4. Simplify for $x > 0$.

$$\sqrt{(81x)^2}$$

5. Private Investigator Samuel I. Snoop solved 42 cold cases in 12 weeks. At this rate . . .

- how long will it take him to solve 77 cases?
- did he solve at least 17 cases in five weeks?
- how many cases could he solve in 15 weeks?

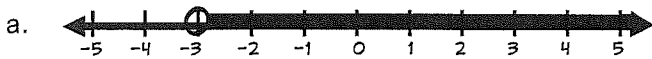
BRRRRR...
THESE ARE
REALLY COLD CASES!

Name _____

1. Evaluate:

Negative fifty-eight divided by
half of negative eight equals

2. Which is the correct graph of $2x - 2 < x + 3$?



3. Solve: $\frac{1}{4n} + 20 > 12$

4. Detective Dewey Surch investigated 170 burglaries in the past six months. This is 85% of all the cases he handled in that time. What was the detective's case load?

230 370
144 250 200
310

5. Challenge Problem

A group of sharp detectives confiscated several bags of stolen money. Follow the clues on the outside of each bag to find out what's inside.

A. \$7,100

- TOTAL OF 177 BILLS
- THREE KINDS OF U.S. BILLS:
5'S, 50'S, & 100'S
WHAT ARE THE BILLS?

B. \$68.50

- 440 U.S. COINS
- THREE KINDS OF COINS
WHAT ARE THE COINS?

C. 300 U.S. Bills

- THREE DIFFERENT KINDS OF BILLS
WHAT IS THE GREATEST AMOUNT THAT COULD BE IN THE BAG?
WHAT IS THE LEAST AMOUNT THAT COULD BE IN THE BAG?

D.

HOW MUCH IS LEFT IN THE BAG?

A ROBBER LEFT THE BANK WITH \$14,000 IN BILLS. DUE TO A HOLE IN THE BAG, ONE-FIFTH WAS LEFT. LATER, TWO-SEVENTHS OF THE REMAINING AMOUNT FELL OUT THROUGH THE HOLE.

E.

HOW MUCH IS IN THE BAG?

- CONTAINS 48% OF TOTAL AMOUNT IN BANK VAULT
- \$214,240 IS LEFT IN THE BANK VAULT

F.

HOW MUCH IS IN THE BAG?

- 5 EVEN DIGITS, ALL > 0
- FOUR ARE THE SAME
- GREATEST DIGIT IN TENS PLACE
- SUM OF DIGITS EQUALS 14